

USSN 09/337,584

**In the Claims**

Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please cancel claims 48, 55, 58, 60-81, 86-89, 91, 93, 95, 97, 99 and 101 without prejudice or disclaimer.

Please add new claims 102-103.

Please amend pending claims 57, 82, and 90 as noted below.

1-41. (Canceled).

42. (Previously Amended) A method for treating asthma in a subject, comprising administering to an asthmatic subject an effective amount for treating asthma in the subject of an immunostimulatory nucleic acid, having a sequence including at least the following formula:



wherein C is unmethylated, wherein  $X_1 X_2$  and  $X_3 X_4$  are nucleotides, wherein at least one internucleotide linkage has a phosphate backbone modification.

43. (Previously Presented) The method of claim 42, wherein the  $5' X_1 X_2 CGX_3 X_4 3'$  sequence is a non-palindromic sequence.

44. (Previously Amended) A method for treating asthma in a subject, comprising administering to an asthmatic subject an effective amount for treating asthma in the subject of an immunostimulatory nucleic acid, having a sequence including at least the following formula:



USSN 09/337,584

wherein C is unmethylated, wherein  $X_1X_2$  and  $X_3X_4$  are nucleotides, wherein the nucleic acid has 8 to 100 nucleotides.

45. (Previously Amended) The method of claim 42, wherein the phosphate backbone modification is a phosphorothioate modification.

46. (Previously Presented) The method of claim 42, wherein the nucleic acid backbone includes the phosphate backbone modification on the 3' side of the nucleic acid.

47. (Previously Amended) The method of claim 42, wherein the phosphate backbone modification is a phosphorodithioate modification.

48. (Canceled).

49. (Previously Presented) The method of claim 42, wherein  $X_1X_2$  are GpA and  $X_3X_4$  are TpT.

50. (Previously Presented) The method of claim 42, wherein  $X_1$  and  $X_2$  are purines and  $X_3$  and  $X_4$  are pyrimidines.

51. (Previously Presented) The method of claim 42, wherein  $X_1X_2$  are GpA and  $X_3$  and  $X_4$  are pyrimidines.

52. (Previously Presented) The method of claim 42, wherein the immunostimulatory nucleic acid is 8 to 40 nucleotides in length.

53. (Previously Presented) The method of claim 42, wherein the immunostimulatory nucleic acid is an isolated immunostimulatory nucleic acid.

USSN 09/337,584

54-55. (Canceled).

56. (Previously Amended) The method of claim 42, wherein the immunostimulatory nucleic acid comprises the following nucleotide sequence TCCATGACGTTCTGACGTT (SEQ ID NO. 10).

57. (Currently Amended) The method of claim 42, wherein the immunostimulatory nucleic acid comprises a nucleotide sequence selected from the group of the following nucleotide sequences ~~TCCATGTCGCTCCTGATGCT (SEQ ID NO:37), TCCATAACGTTCTGATGCT (SEQ ID NO:3), TCCATGACGATCCTGATGCT (SEQ ID NO:87), TCCATGACGTCCCTGATGCT (SEQ ID NO:39), TCCATGTCGTTCTGATGCT (SEQ ID NO:38), TCGTCGTTTTGTCGTTTTGTCGTT (SEQ ID NO:46), TCGTCGTTGTCGTTGTCGTT (SEQ ID NO:47), TCCATGACGGTCCTGATGCT (SEQ ID NO:35), TCCATGACGCTCCTGATGCT (SEQ ID NO:88), and TCCATGACGTTCTGATGCT (SEQ ID NO:7), TCCATCACGTGCCTGATGCT (SEQ ID NO:40), TCGTCGTTGTCGTTTTGTCGTT (SEQ ID NO:49), GCGTGCGTTGTCGTTGTCGTT (SEQ ID NO:56), TGTCGTTTGTGCTTTGTGCTT (SEQ ID NO:48), TGTCGTTGTCGTTGTCGTT (SEQ ID NO:50), TCGTCGTCGTCGTT (SEQ ID NO:51), TCCTGTCGTTCTTGTGCTT (SEQ ID NO:52), TCCTGTCGTTTTTTGTGCTT (SEQ ID NO:53), TCGTCGCTGTCTGCCCTTCTT (SEQ ID NO:54), and TCGTCGCTGTTGTCGTTTCTT (SEQ ID NO:55).~~

58. (Canceled).

59. (Previously Amended) The method of claim 42, wherein the immunostimulatory nucleic acid comprises the following nucleotide sequence TCGTCGTTTTGTGCTTTTGTGCTT (SEQ ID NO:46).

USSN 09/337,584

60-81. (Canceled).

82. (Currently Amended) A method for treating asthma in a subject, comprising administering to an asthmatic subject an effective amount for treating asthma in a subject of an immunostimulatory nucleic acid, wherein the immunostimulatory nucleic acid is 8-40 nucleotides in length, includes a 5'TC and comprises a nucleotide sequence GTCGTT (SEQ. ID. NO: 57) ~~selected from the group of the following nucleotide sequences~~ ~~TCCATGTCGATCCTGATGCT (SEQ ID NO:36), TCCATGTCGGTCCTGATGCT (SEQ ID NO:28), and GGGGTCAACGTTGAGGGGGG (SEQ ID NO:12).~~

83. (Previously Presented) The method of claim 82, wherein the nucleic acid has a phosphodiester backbone.

84. (Previously Presented) The method of claim 82, wherein the nucleic acid has a chimeric phosphodiester-phosphorothioate backbone.

85. (Previously Amended) The method of claim 82, wherein the immunostimulatory nucleic acid comprises the following nucleotide sequence GGGGTCAACGTTGAGGGGGG (SEQ ID NO:12).

86-89. (Canceled).

90. (Currently Amended) A method for treating asthma in a subject, comprising administering to an asthmatic subject an effective amount for treating asthma in the subject of a nucleic acid, having a sequence including at least the following formula:



USSN 09/337,584

wherein C is unmethylated, wherein  $X_1X_2$  and  $X_3X_4$  are nucleotides, ~~and wherein the nucleic acid is isolated bacterial DNA~~ wherein at least one internucleotide linkage has a phosphate backbone modification and wherein the nucleic acid has 8 to 40 nucleotides.

91. (Canceled)

92. (Previously Presented) A method for treating asthma in a subject, comprising orally administering to an asthmatic subject an effective amount for treating asthma in the subject of a nucleic acid having a sequence including at least the following formula:



wherein C is unmethylated, and wherein  $X_1X_2$  and  $X_3X_4$  are nucleotides.

93. (Canceled).

94. (Previously Presented)) A method for treating asthma in a subject, comprising administering to an asthmatic subject an effective amount for treating asthma in the subject of a nucleic acid having a sequence including at least the following formula:



wherein C is unmethylated, wherein  $X_1X_2$  and  $X_3X_4$  are nucleotides, and wherein the nucleic acid is administered by a route selected from the group consisting of transdermal and subcutaneous.

95. (Canceled)

96. (Previously Presented) A method for treating asthma in a subject, comprising administering to an asthmatic subject an effective amount for treating asthma in the subject of a nucleic acid having a sequence including at least the following formula:

USSN 09/337,584



wherein C is unmethylated, wherein  $X_1X_2$  and  $X_3X_4$  are nucleotides, and wherein the nucleic acid is administered in a formulation selected from the group consisting of a nucleic acid delivery complex, a liposome, a virosome, and a nanoparticle.

97. (Canceled)

98. (Previously Presented) The method of claim 42, wherein the nucleic acid is administered by a route selected from the group consisting of oral, transdermal, and subcutaneous.

99. (Canceled).

100. (Previously Presented) The method of claim 42, wherein the nucleic acid is delivered in a formulation selected from the group consisting of a nucleic acid delivery complex, a liposome, a virosome, and a nanoparticle.

101. (Canceled).

102. (New) The method of claim 44, wherein at least one internucleotide linkage of the nucleic acid has a phosphate backbone modification.

103. (New) The method of claim 44, wherein the phosphate backbone modification is a phosphorothioate modification.